a carbohydrate derivative, O-, N-, C-, or S-glycosidically bound to the spacer molecule, which carbohydrate derivative specifically binds in a sample to at least one member selected from the group consisting of a protein, a virus and a cell.

23. The biosensor according to claim 22, wherein said carbohydrate derivative is a biologically active part of a naturally occurring carbohydrate sequence which binds in a biospecific manner to at least one member selected from the group consisting of a protein, a virus and a cell.

24. The biosensor according to claim 22, wherein said spacer is chemically bound or is bound via adsorption to the surface of the biosensor.

25. The biosensor according to claim 22, wherein said surface comprises a signal transducer.

26. The biosensor according to claim 22, wherein said surface comprises a means for monitoring a physical signal.

27. The biosensor according to claim 26, wherein said means for monitoring a physical signal is at least one member selected from the group consisting of a photometer, a chemical electrode, an electrochemical electrode, a temperature signal transducer, and a pressure signal transducer.

28. The biosensor according to claim 23, wherein said biologically active carbohydrate

derivative is selected from the group consisting of a mono-, di-, tri-, tetra-, or penta-saccharide sequence.

29. The biosensor according to claim 23, wherein said biologically active carbohydrate derivative selectively binds to at least one member selected from the group consisting of a cancer cell, a blood group determinant, a pathogenic bacteria, a pathogenic virus, a pathogenic toxin, a protein associated with an inflammatory reaction, and a cell associated with an inflammatory reaction.

30. The biosensor according to claim 23, wherein said carbohydrate derivative binds to P-fimbriated E. coli.

31. The biosensor according to claim 22, wherein said carbohydrate derivative comprises at least one component selected from the group consisting of hexosamine-, fucose-, galactose-, glucose-, mannose-, xylose-, a N-acetylneuraminic acid residue, and analogs thereof.

32. The biosensor according to claim 31, wherein the carbohydrate derivative has been derivatized in at least one hydroxyl group or amino group thereof with an organic or inorganic group.

33. The biosensor according to claim 22, in which the carbohydrate derivative contains at least one O-, N-, S-, or C-glycosidically bound aglycon.

34. The biosensor according to claim 33, in which the aglycon contains at least one

aliphatic or aromatic compound.

35. The biosensor according to claim 33, in which the aglycon part of the carbohydrate derivative contains an amino acid-, peptide-, or protein component.

36. The biosensor according to claim 22, in which the carbohydrate derivative comprises at least one of a glycoprotein or a neoglycoprotein.

37. The biosensor according to claim 22, wherein said surface is operably associated with an optical sensor which gives a signal change upon binding of a protein, a virus or a cell to the carbohydrate derivative bound via the spacer to the surface.

38. The biosensor according to claim 37, wherein the optical sensor functions by at least one method selected from the group consisting of surface plasmon changes, ellipsometry, reflection measurement and polarization measurement.

39. The biosensor according to claim 22, in which the surface is operably associated with a member selected from the group consisting of a piezoelectric crystal, an electrochemical electrode and a thermistor.

40. The biosensor according to claim 22, wherein said surface of the biosensor comprises gold.

41. A method of binding a carbohydrate derivative to a gold surface, comprising:

coating the surface with a thiol compound containing an organic group for chemical binding of a carbohydrate derivative, and

contacting said coated surface with the carbohydrate derivative to be bound.

42. A gold surface having a carbohydrate derivative covalently bound to the gold surface.

43. A method of using the biosensor according to claim 22 to determine the presence or amount of a protein, a virus or a cell, comprising the steps of:

exposing the biosensor to a sample containing a protein, a virus or a cell to be measured,

binding a protein, virus or cell to the biosensor,

measuring the presence or amount of the protein, virus or cell in the sample.

44. An immobilized carbohydrate derivative biosensor, comprising a structure represented by:

carbohydrate derivative - R - X - biosensor surface, wherein

the carbohydrate derivative is a biologically active molecule,

R is an alkyl or aromatic organic compound, and

X is a binding group linking R to a biosensor surface.

45. An immobilized carbohydrate derivative biosensor, comprising a structure represented by :

carbohydrate derivative - R - X - protein - biosensor surface wherein